

Notice of Allowability

Application No.

10/650,317

Examiner

Tuan V. Thai

Applicant(s)

ROZARIO ET AL.

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Interview summary conducted on 01/10/2005.
2. ☒ The allowed claim(s) is/are 25, 27-30 and 32-41 renumbered as 1-15 respectively.
3. ☒ The drawings filed on 27 August 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 11/03/2003
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 01/18/2005.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


TUAN V. THAI
PRIMARY EXAMINER

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Part III DETAILED ACTION

Specification

1. Claims 25, 27-30 and 32-41 are presented for examination. Claims 1-24 are subjected to the restriction requirement, and being withdrawn from further consideration. Claims 26, 31 and 42 are cancelled.

2. Applicant is reminded of the duty to fully disclose information under 37 CFR 1.56.

EXAMINER'S AMENDMENT

3. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.

4. Authorization for this Examiner's Amendment was given in a telephone interview with Mr. Richard Butler; on January 10, 2005.

5. The application has been amended as follows:

a. In the claims:

a1. Please cancel claims 1-24, 26, 31 and 42.

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a2. Please amend claims 25, 30 and 37 as follow:

Claim 25. (amended) A method of managing allocation of free memory, said method comprising:

providing a free list having a first set of addresses of free memory locations;

providing a bank cache having a second set of addresses of free memory;

providing a global cache having a third set of addresses of free memory locations; [and]

moving a plurality of entries from the free list to the bank cache if a current number of entries in the bank cache is less than a lower threshold; and

moving a plurality of entries from the bank cache to the free list if the current number of entries in the bank cache is greater than an upper threshold;

wherein the first, second and third sets of addresses combine to represent the free memory

Claim 30. (amended) A method of managing allocation of free memory, wherein the free memory is represented by a plurality of addresses, said method comprising:

providing a plurality of memory modules each associated with a section of memory the free memory, wherein each memory module

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includes a free list containing a first list of entries of free memory address in the section of memory, and wherein each memory module further includes an associated bank cache containing a second list of entries of free memory addresses in the section of memory;

providing a global cache containing a third list of entries of free memory addresses of the free memory, wherein the third list includes entries of free memory address from a plurality of the sections of memory; [and]

moving a plurality of entries from one of the free list to the associated bank cache if a current number of entries in the associated bank cache is less than a first threshold; and

maintaining a list of distributed entries among the memory modules by moving an entry to the global cache from a changing one of the associated bank caches if the global cache is not full;

wherein the plurality of first and second lists and the third list combine to represent the free memory.

Claim 37. (amended) A method of distributing free memory addresses, said method comprising:

providing a plurality of free list and bank cache pairs, wherein each pair is associated with a subsection of memory, and wherein the free list and the bank cache each contain entries,

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wherein each entry represents a free memory address within the subsection of memory; [and]

moving one ore more entries in one of the pairs from the free list to the bank cache if a current number of entries in the bank cache is less than a first threshold; and

moving one or more entries to the free list from the bank cache if the current number of entries in the bank cache is greater than a second threshold.

REASONS FOR ALLOWANCE

6. The following is an Examiner's Statement of Reasons for Allowance:

The prior art of record does not teach or suggest, alone or in combination, **all** the limitations of the amended independent claims of the current invention (claims 25, 30 and 35-37) wherein the invention directs toward system and method for controlling the allocation of free memory utilizing free list having first set of addresses of free memory locations, a bank cache having a second set of addresses of free memory locations, and global cache with a third set of addresses of free memory locations by moving data entries from the free list to the bank cache if a current number of data entries in the bank cache is less than a lower threshold, and moving the data entries from the bank cache

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to the free list if the current number of entries in the bank cache is greater than an upper threshold, wherein the combination of first, second and third sets of addresses represent the free memory. The closest prior art of Pitts ('452) do not disclose all the combined limitations and their functionality as being claimed, where Pitt discloses a channel free list that is formed by linking free channels together where the channel is a data structure and not the addresses of the free memory location as being claimed. In light of the foregoing, claims 25, 30 and 35-37 of the present application are found to be patentable over the prior arts.

Claims 27-29, 32-34 and 38-41 further limit the allowable independent claims 25, 30 and 37. These claims are therefore allowable for the same reason as set forth above.

Any comments considered necessary by Applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

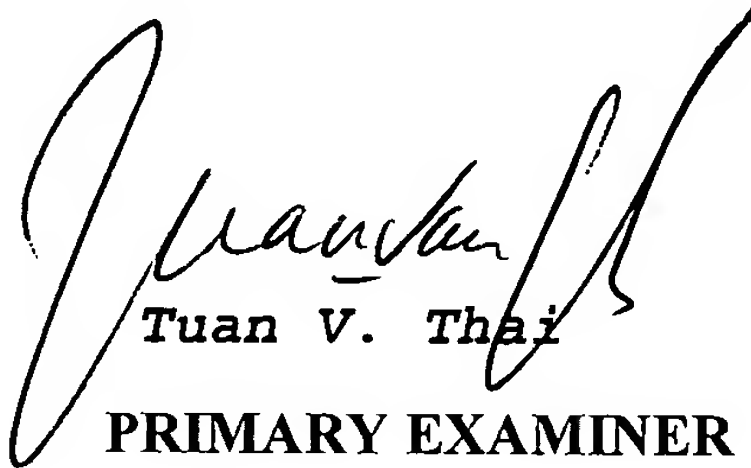
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan V. Thai whose telephone number is (571)-272-4187. The examiner can normally be reached on from 6:30 A.M. to 4:00 P.M..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew M. Kim can be reached on (571)-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVT/January 19, 2005


Tuan V. Thai
PRIMARY EXAMINER
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